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10/606,430	06/25/2003	Chan-Soo Hwang	784-53	6328

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EXAMINER	
MOORE, IAN N	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/606,430	HWANG ET AL.	
	Examiner	Art Unit	
	IAN N. MOORE	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 15* is/are rejected.

7)☒ Claim(s) *2-14 and 16-19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2-25-08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on 8-6-07. These drawings **(FIG. 16-17)** are accepted by the examiner.

2. The drawings **(FIG. 2,8,10 and 11)** are still objected to because there is a lack of descriptive text legends for FIG. 2,8,10 and 11 (e.g. in FIG. 2, "42" should be labeled as "symbol 42", "A" should be labeled as "length A") [see 37 CFR 1.83, CFR 1.84 [5(O)], MPEP § 608.02(c)]. (*Note- this issue has been raised in the previous action, and in response the applicant indicated in the remark that replacement drawing will be submitted as soon as possible. Thus, objection is sustained until the corrected replacement drawings are received).*

The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

3. The information disclosure statement filed 2-25-08 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because **U.S. Patent document Number 6,115,351 is not issued to Weck at 9-2000.** Examiner was unable to verify the U.S. Patent documenter number with inventor name and issue date.

It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with

the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van (EP 0869647) in view of Kostic (US007079503B2).

Regarding Claim 1, Van discloses an orthogonal frequency division multiplexing (OFDM) communication method (see FIG. 1, OFDM transmitter is performing processes/methods) to perform adaptive operations in consideration of channel characteristics, comprising the steps of

changing at least one of a length of a transmission symbol (see page 3, line 24-31; symbol duration/length (Ts)), a format of a frame (see page 3, line 24-31; number of carriers (N) in a frame), and a format of the transmission symbol (see page 3, line 24-31; number of bits per symbol) depending on a transmission channel type of the transmission symbol in which communication is performed (see FIG. 1, per received input/indication/signal from dynamic rate control 15 which indicates the carrier/channel category/type/sort (i.e. a carrier/channel category/type/sort that used increase number of bits per symbol (e.g. utilizing phase modulation

8-PSK), or a carrier/channel category/type/sort that used normal/regular number of bit per symbol (e.g. utilizing QPSK (4-PSK)) of received symbol for communication; see page 3, line 24 to page 5, line 47; see col. 4, line 10-37).

Although Van discloses a symbol duration/length is adjusted/scaled, which is, used as guard time/interval (see page 3, line 24-31), Van does not explicitly disclose "a radius of a cell".

However, it is well known in the art that a symbol duration/length is adjusted/scaled according to as guard time/interval to compensate propagation delay. In particular, Kostic teaches an orthogonal frequency division multiplexing communication method (see col. 3, line 56-67) determining depending on both a transmission channel type (see FIG. 2-3, determining according to the type of transmission type (i.e. control channel, simulcast channel and/or dedicated channels); see col. 3, line 15-24; see col. 5, line 56 to col. 7, line 21) and a radius of a cell (see col. 4, line 10-44; cell radius (1, 2,5,10 km)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a radius of a cell, as taught by Kostic in the system of Van, so that it would provide wireless services efficiently; see Kostic col. 2, line 29-33; see col. 3, line 25-26.

Regarding Claim 15, Van discloses an orthogonal frequency division multiplexing (OFDM) communication apparatus (see FIG. 1, OFDM transmitter) to perform adaptive operations in consideration of channel characteristics, comprising:

a symbol inspector (see FIG. 1, Dynamic Rate Control 15), for inspecting a transmission channel type of a transmission symbol (see page 4, line 9-36;determining/evaluating the carrier/channel category/type/sort (i.e. a carrier/channel category/type/sort that used increase

number of bits per symbol (e.g. utilizing phase modulation 8-PSK), or a carrier/channel category/type/sort that used normal/regular number of bit per symbol (e.g. utilizing QPSK (4-PSK)) of received symbol; see page 3, line 24 to page 5, line 47; see col. 4, line 10-37) and outputting the result of the inspection as a first control signal (see FIG. 1, responding the evaluated/determined scaled/adjusting input/indication/signal to a combined system of coding 14, IFFT 16 and cyclic prefix and widowing 18); see page 4, line 16 to page 5, line 34); and

a symbol and format converter (see FIG. 1, a combined system of coding 14, IFFT 16 and cyclic prefix and widowing 18), for changing at least one of a length of a transmission symbol (see page 3, line 24-31; symbol duration/length (Ts)), a format of a frame (see page 3, line 24-31; number of carriers (N) in a frame), and a format of the transmission symbol (see page 3, line 24-31; number of bits per symbol) in response to the first control signal in which communication is performed (see FIG. 1, per received input/indication/signal from dynamic rate control 15 for communication; see page 3, line 24 to page 5, line 47).

Although Van discloses a symbol duration/length is adjusted/scaled, which is, used as guard time/interval (see page 3, line 24-31), Van does not explicitly disclose "a radius of a cell".

However, it is well known in the art that a symbol duration/length is adjusted/scaled according to as guard time/interval to compensate propagation delay. In particular, Kostic teaches an orthogonal frequency division multiplexing communication method (see col. 3, line 56-67) determining depending on both a transmission channel type (see FIG. 2-3, determining according to the type of transmission type (i.e. control channel, simulcast channel and/or dedicated channels); see col. 3, line 15-24; see col. 5, line 56 to col. 7, line 21) and a radius of a cell (see col. 4, line 10-44; cell radius (1, 2,5,10 km)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a radius of a cell, as taught by Kostic in the system of Van, so that it would provide wireless services efficiently; see Kostic col. 2, line 29-33; see col. 3, line 25-26.

6. Claim 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohnke (US 20020102940A1) in view of Kostic (US007079503B2).

Regarding Claim 1, Bohnke discloses an orthogonal frequency division multiplexing (OFDM) communication method (see FIG. 1, OFDM system is performing processes/methods) to perform adaptive operations in consideration of channel characteristics, comprising the steps of

changing at least one of a length of a transmission symbol (see page 2, paragraph 33; Table 2; changing the length of OFDM symbol), a format of a frame (see FIG. 2, format of a frame (e.g. BCH-PDU, FCH-PDU, etc.) see page 2, paragraph 25-32), and a format of the transmission symbol (see FIG. 2, format of a OFDM symbol; see page 2, paragraph 33) depending on both a transmission channel type of the transmission symbol (see FIG. 1-3, according to channel type (e.g. BCH, FCH, LCH, SCH, ACH, RCH) of the OFDM symbol; see page 1, paragraph 10-11; see page 2, paragraph 25-35) and a span/fading of the cell in which communication is performed (see page 2, paragraph 35; see page 3, paragraph 52; see page 4, paragraph 68-84; see page 5, paragraph 94-101; note that a span/fading of the is due to various modulation (i.e. BPSK, QPSK, QAM), which performing communication).

Bohnke does not explicitly disclose "a radius of a cell".

However, it is well known in the art that a symbol duration/length is adjusted/scaled according to as guard time/interval to compensate propagation delay. In particular, Kostic teaches an orthogonal frequency division multiplexing communication method (see col. 3, line 56-67) determining depending on both a transmission channel type (see FIG. 2-3, determining according to the type of transmission type (i.e. control channel, simulcast channel and/or dedicated channels); see col. 3, line 15-24; see col. 5, line 56 to col. 7, line 21) and a radius of a cell (see col. 4, line 10-44; cell radius (1, 2,5,10 km)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a radius of a cell, as taught by Kostic in the system of Bohnke, so that it would provide wireless services efficiently; see Kostic col. 2, line 29-33; see col. 3, line 25-26.

Regarding Claim 15, Bohnke discloses an orthogonal frequency division multiplexing (OFDM) communication apparatus (see FIG. 1, OFDM system) to perform adaptive operations in consideration of channel characteristics, comprising:

a symbol inspector (see FIG. 4, a combined system of adaptive loading calculation 8 and fading channel profile 9), for inspecting a transmission channel type of a transmission symbol (see page 4, paragraph 75-78; determines/inspecting/calculating the channel type (e.g. BCH, FCH, LCH, SCH, ACH, RCH) of the OFDM symbol; see page 1, paragraph 10-11; see page 2, paragraph 25-35) and outputting the result of the inspection as a first control signal (see FIG. 4, outputting the load/control result as load/control signal); see page 1, paragraph 10-11; see page 2, paragraph 25-35; see page 4, paragraph 75); and

a symbol and format converter (see FIG. 4, a combined system of adaptive bit to symbol mapping 7 and OFDM symbol generator 26), for changing at least one of a length of a transmission symbol (see page 3, line 24-31; symbol duration/length (Ts)), a format of a frame (see page 3, line 24-31; number of carriers (N) in a frame), and a format of the transmission symbol (see page 3, line 24-31; number of bits per symbol) in response to the first control signal in which communication is performed (see FIG. 4, according to load/control signal from the adaptive loading calculation 13; see page 1, paragraph 10-11; see page 2, paragraph 25-35) and a span/fading of the cell in which communication is performed (see page 2, paragraph 35; see page 3, paragraph 52; see page 4, paragraph 68-84; see page 5, paragraph 94-101; note that a span/fading of the is due to various modulation (i.e. BPSK, QPSK, QAM), which performing communication).

Bohnke does not explicitly disclose "a radius of a cell".

However, it is well known in the art that a symbol duration/length is adjusted/scaled according to as guard time/interval to compensate propagation delay. In particular, Kostic teaches an orthogonal frequency division multiplexing communication method (see col. 3, line 56-67) determining depending on both a transmission channel type (see FIG. 2-3, determining according to the type of transmission type (i.e. control channel, simulcast channel and/or dedicated channels); see col. 3, line 15-24; see col. 5, line 56 to col. 7, line 21) and a radius of a cell (see col. 4, line 10-44; cell radius (1, 2,5,10 km)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a radius of a cell, as taught by Kostic in the system of

Bohnke, so that it would provide wireless services efficiently; see Kostic col. 2, line 29-33; see col. 3, line 25-26.

Allowable Subject Matter

7. **Claims 2-14 and 16-19** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Argument

8. Applicant's arguments with respect to claims 1 and 15 have been considered but are moot in view of the new ground(s) of rejection.

Regarding claims 1 and 15, the applicant argued that, "…Van does not disclose "…transmission channel type of the transmission symbol…" in pages 1-2.

In response to applicant's argument, the examiner respectfully disagrees with the argument above.

Van discloses changing at least one of a length of a transmission symbol (see page 3, line 24-31; symbol duration/length (Ts)), a format of a frame (see page 3, line 24-31; number of carriers (N) in a frame), and a format of the transmission symbol (see page 3, line 24-31; number of bits per symbol) depending on a transmission channel type of the transmission symbol in which communication is performed **(see FIG. 1, per received input/indication/signal from dynamic rate control 15 which indicates the carrier/channel category/type/sort (i.e. a carrier/channel category/type/sort that used increase number of bits per symbol (e.g.**

utilizing phase modulation 8-PSK), or **a carrier/channel category/type/sort that used normal/regular number of bit per symbol (e.g. utilizing QPSK (4-PSK)) of received symbol for communication; see page 3, line 24 to page 5, line 47; see col. 4, line 10-37**).

Kostic teaches an orthogonal frequency division multiplexing communication method (see col. 3, line 56-67) determining depending on both a transmission channel type (**see FIG. 2-3, determining according to the type of transmission type (i.e. control channel, simulcast channel and/or dedicated channels); see col. 3, line 15-24; see col. 5, line 56 to col. 7, line 21**) and a radius of a cell (**see col. 4, line 10-44; cell radius (1, 2,5,10 km)).**

Thus, in view of the above, it is clear that the combined system of Van and Kostic disclose the claimed invention.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to IAN N. MOORE whose telephone number is (571)272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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